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Second. When the electrical fluid passes from the earth upwards. The earth, from its composition, is infinitely more liable to be charged unequally in *strata*, than the air or clouds. When the lightning strikes, as we term it, it is as often from the earth upwards to the cloud, as from the cloud to the earth; although I conceive this to be a case that will very seldom happen to a rod properly fixed, yet such instances may occur; and most certainly the variety of points terminating in so many directions would be more dangerous, as before observed, than a rod with one point only.

I am sensible, some of the ideas I have here expressed, differ from the generally received opinions on the subject. I however think they can be supported. If they afford you any satisfaction, it will much gratify your very sincere friend,

AARON PUTNAM.

Rev. Dr. Jedidiah Morse.

Charlestown, Jan. 12th, 1799.



Remarks on a Natural Phosphorus. By Doctor SOLOMON DROWN.

Providence, Dec. 30th, 1786.

SIR,

AS the following relation of a phenomenon, observed at a place on Hockanum river, near its junction with the Hudson, by Mr. Jeremiah F. Jenkins, a reputable merchant of this town;

town ; has been thought by several gentlemen here, worth communicating to the American Academy. I was led by the advice of my ingenious friend, Mr. Benjamin West, to address it to you.

Some time last October, Mr. Jenkins was at his friend's house, at *Schaghticoek*, on the Hofack ; and going with him into his store, in the evening, they discovered on the floor, the appearance of scattered fire, which at first was supposed to be rotten wood ; but on stooping down, it had a more luminous appearance. This induced Mr. Jenkins to put his finger on a small piece, which he drew along on the floor, a lucid train succeeding, and retaining its brightness. He then rubbed it in a circular manner, to about the size of a crown, and left it to call some persons from the house adjoining, to see this extraordinary appearance.

On returning with the company, he undertook to shew them the effect of rubbing another piece, about the size of a parsnip seed ; and proceeding as before, till it was about double the surface mentioned (the brightness as in the first experiment) it suddenly flashed into a blaze, set the floor on fire, and had the effect of the most powerful caustic on his finger ; which, through extreme pain, being rubbed against his thumb, affected it equally, both being excessively burned. In this disagreeable situation, he attempted to extinguish the fire, by plunging his hand into a basin of water repeatedly, holding it under once fifteen or twenty minutes ; during the most of which time, the finger

and thumb were free from pain ; yet when exposed again to the air, the fiery appearance and pain returned. He was then led to wash them in water, with plenty of soft soap,* which extinguished the lucid appearance, though the pain continued.

The attempt to extinguish the fire on the floor was attended with the same difficulty ; nor was the flashing suppressed till after repeated ablutions. He observes that the blaze had the appearance and smell of burning sulphur. Two pieces being preserved, one in paper, the other in a silver salt celler, till next day, the first, on examination, appearing partly dissolved, was wrapped in a fresh piece of paper, and put in a small close trunk. On taking it out to examine again, it unexpectedly flashed into a blaze, and was consumed with the paper. The other piece, he brought with him in a small snuff box. This retained its luminous appearance seven or eight nights without friction, a lucid vapour arising from it on opening the box.

Mr. Jenkins conjectured, that it might have been conveyed into the store from the neighbouring bank of the river, by adhering to the foot of some person ; and to strengthen this supposition, mentions the report of boys' having observed something like fire flashing from the bank, when fishing in the evening.

The box herewith enclosed, contains only a very small piece of this matter adhering to one side. When last examined, it had not so far lost its properties, but that a piece, the size of a

2

pin's

* Query, whether the alkaline salt of the soap did not neutralize the phosphoric acid, in this natural production?

pin's head, rubbed on smooth paper, would exhibit a luminous appearance in the dark.

We are sorry, that the quantity brought was not sufficient to be subjected to processes for ascertaining its component parts. May they not be a calcareous earth, for the basis, and vitriolic acid, united with phlogiston, into a highly inflammable sulphur?

Should the vitriolic acid be procurable from this substance, it might well pay the researches of those, who shall effect the discovery of its bed.

Happy, if I can, by any means, conduce to the advancement of American science,

I am, with the greatest respect, Sir,

Your most obedient humble servant,

SOLOMON DROWN.

Rev. S. Williams, L.L.D.



Observations upon the art of extracting Marine Salt from sea water, by evaporation, produced by the sun's heat ; with a description of the works, and the several processes used in preparing Medicinal Salts, and Magnesia Alba. By JAMES THACHER, M.D. F.A.A.

EVERY essay having in view the advancement of our manufactories, and encouraging the efforts of industry, will, it is presumed, receive the approbation of every class and description